CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-14
NPDES NO. CA0037810

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF PETALUMA - WATER POLLUTION CONTROL PLANT,
SONOMA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The City of Petaluma (hereinafter called the Discharger) submitted a report of waste discharge dated October 19, 1984 for reissuance of NPDES Permit No. CA0037810.

2. The Discharger presently discharges an average dry weather flow of 2.8 million gallons per day (mgd) from its secondary treatment plant which has a dry weather design capacity of 5.20 mgd.

   Treatment consists of primary sedimentation, biological treatment using trickling filters, secondary sedimentation, followed by oxidation ponds (280 acres), chlorination and dechlorination. Sludge is treated by anaerobic digestion and disposed to a landfill. The treated wastewater is discharged into Petaluma River, a water of the State and United States, through a submerged diffuser about 100 feet offshore at a depth of 8.6 feet below mean lower low water (Latitude 38 deg., 12 min., 33 sec. N - Longitude 122 deg., 34 min., 22 sec. W). During dry weather months the treated wastewater is applied to agricultural land.

3. The discharge is presently governed by Waste Discharge Requirements, Order Nos. 79-169, 80-54 and 82-17 which allows discharge into Petaluma River.

4. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for the Petaluma River.

5. The beneficial uses of the Petaluma River are:

   - Water contact and Non-contact water recreation
   - Wildlife Habitat
   - Preservation of Rare and Endangered Species
   - Marine Habitat
   - Fish Migration and Spawning

- Cold and Warm Fresh Water Habitat
- Navigation

6. The physical and operational characteristics of the stabilization ponds contribute to the suspended solids (ss) in the final effluent. Clay particles are suspended by wave action in the final pond due to its shallow nature. Algal growth also contributes to suspended solids. Its impact has increased due to the change in the operational mode of the treatment/storage ponds to accomodate reclamation needs during the period of no discharge. Altering pond levels moves water from the more algal rich "initial" ponds to the final pond at a faster rate, thereby reducing particulate settling and increasing ss levels. The Federal Secondary Treatment regulations recognize the inability of waste stabilization ponds to consistently meet standard secondary treatment requirements and therefore allow alternative limitations when they are consistent with proper operation and maintenance of the facility. The ss effluent limitation in B.1 reflect the alternative limits allowed by Federal Regulations.

7. The alternative ss effluent limitation in B.1 will not have a significant adverse impact on water quality in the Petaluma river during the period of allowable discharge. Most of the increased ss in the effluent is due to suspended clay from wind suspension of bottom sediments in the pond and bank erosion and will not add significantly to the naturally high suspended particulate matter in the river which is increased by winter watershed runoff flows.

8. The final ss effluent limitations are based on currently available operational and sampling data. More information, however, is needed on future pond system operational schemes and resultant impacts on the final effluent suspended solids.

9. An Operations and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, and recommended operating strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, this manual should be kept updated to reflect significant changes in plant facilities or activities.

10. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

11. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

12. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the Discharger in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisins of the Clean Water Act as amended and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. Bypass or overflow of untreated or partially treated wastewater to waters of the State either at the treatment plant or from any of the collection system and pump stations tributary to the treatment plant is prohibited.

2. The average dry weather flow shall not exceed 5.2 mgd. The average shall be determined over three dry consecutive months each year.

3. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

4. The discharge of wastewater to the Petaluma River is prohibited from May 1 through October 20 of each year. The Executive Officer may authorize discharge prior to October 20 or subsequent to May 1 based upon a demonstration that rainfall has produced adequate flushing flow in the Petaluma River.

B. Effluent Limitations

1. Effluent discharged shall not exceed the following limits:

Constituents	Units	30-day Average	7-day Average	Maximum Daily	Instantaneous Maximum
a. Settleable Matter	ml/l-hr	0.1	-	-	0.2
b. BOD or	mg/l	30	45	60	-
Carbonaceous BOD	mg/l	25	40	50	-
c. Total Suspended Solids	mg/l	45	65	70	-
d. Oil & Grease	mg/l	10	-	20	-
e. Total Chlorine Residual(1)	mg/l	-	-	-	0.0
f. Total Coliform Organisms	MPN/100ml	At some point in the treatment process, 23 MPN/100 ml, median of the last seven days for which analyses have been completed			

(1) Requirement defined as below the limit of detection in standard test methods and is to be met at the Dechlorination Facility.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

3. The pH of the discharge shall not exceed 9.0, nor be less than 6.0.

4. In any representative set of samples the waste as discharged shall meet the following limit for toxicity: the survival of test organisms acceptable to the Executive Officer in 96-hour bioassays of the effluent shall achieve a median of 90% survival for three consecutive samples and a 90 percentile value of not less than 70% survival for 10 consecutive samples.

5. Representative samples of the effluent shall not exceed the following limits:(1)

Constituent	Unit of Measurement	6 month Median	Daily Maximum
Arsenic	mg/l	0.01	0.02
Cadmium	mg/l	0.02	0.03
Total Chromium	mg/l	0.005	0.01
Copper	mg/l	0.2	0.3
Lead	mg/l	0.1	0.2
Mercury	mg/l	0.001	0.002
Nickel	mg/l	0.1	0.2
Silver	mg/l	0.02	0.04
Zinc	mg/l	0.3	0.5
Cyanide	mg/l	0.1	0.2
Phenolic Compounds	mg/l	0.5	1.0
Total Identifiable Chlorinated Hydrocarbons (2)	mg/l	0.002	0.004

(1) These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

(2) Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls and other identifiable chlorinated hydrocarbons.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the state in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved Sulfide	0.1 mg/l maximum
c.	pH	Variation from natural ambient pH by more than 0.5 pH units.
d.	Un-ionized ammonia	0.025 mg/l as N Annual Median 0.4 mg/l as N Maximum
e.	Nutrients	50 ug/l chlorophyll "a", maximum

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resource Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 or the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. The requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 79-169, 80-54 and 82-17. Order Nos. 79-169, 80-54 and 82-17 are hereby rescinded.

2. Where concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply as follows:

   Mass Emission Limit in kg/day = Concentration limit in mg/l x 3.79 x Actual Flow in mgd averaged over the time interval to which the limit applies.

3. The Discharger shall comply with all sections of this Order immediately upon adoption.

4. The Discharger shall perform a performance evaluation of future pond system operational schemes and resultant impacts on final effluent quality in order to develop and implement a operational procedure that will produce the best effluent quality that the existing facilities are capable of producing. Mitigation alternatives will also be evaluated for any adverse impacts which would cause or potentially threaten the violation of effluent limitations in B.1. An operational stragety for optimal performance will also be developed. Its implementation shall commence at the end of the evaluation period or earlier if all or parts of the stragety will obtain positive results in a cost effective manner. The effluent limitations may be reevaluated by the Board for alteration per federal regulations if the adverse impacts cannot be reasonably mitigated. The performance evaluation plan shall be submitted to the Executive Officer for approval by May 30, 1985 and evaluation and operation stragety procedures completed by October 1, 1986.

5. The Discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year. A time schedule for completion of the initial revision shall be submitted by June 15, 1985. Documentation of operator input and review shall accompany each annual update.

6. The Discharger shall review and update by April 15 annually its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

7. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

8. The Discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977, except A.12 and B.3. Item C.2 of the Standard Provisions shall read as follows: The "30-day or 7-day average"

discharge is the total discharge by weight during 30 or 7 consecutive calendar day periods, respectively, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the 30-day or 7-day average discharge shall be determined by the summation of all the measured discharges by weight divided by the number of days during the 30 or 7 consecutive calendar day period when the measurements were made. For other than 7-day or 30-day periods, compliance shall be based on the average of all measurements made during the specified period.

9. The discharger shall implement its approved industrial Pretreatment Program in accordance with legal authorities, policies, and procedures described in its pretreatment document and in accordance with the federal Clean Water Act, Section 402(b)(8) and (9) and federal pretreatment regulations in 40 CFR 403.

   a. The permittee shall maintain an adequate revenue program and enforce prohibitions of any applicable National Pretreatment Standards established by the U. S. Environmental Protection Agency (EPA).

   b. The discharger shall comply with the requirements titled "Pretreatment of Industrial Wastewater" (Attached) and "Requirements for Pretreatment Annualy Report" (Attached) and shall be subject to enforcement actions, penalties, fines and other remedies as provided for therein and by California law. The sampling and monitoring requirements may be modified upon request of the discharger and written approval of the Executive Officer.

10. This Order expires February 20, 1990. The Discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

11. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 20, 1985.

ROGER B. JAMES
Executive Officer

Attachments:
Standard Provisions and
Reporting Requirements, April 1977
Self-Monitoring Program
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

T E N T A T I V E

SELF MONITORING PROGRAM
FOR

CITY OF PETALUMA WATER POLLUTION CONTROL PLANT

SONOMA COUNTY

NPDES NO. CA 0037810

ORDER NO. 85-14

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and prior to any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall between the point of discharge and the point at which all waste tributary to the outfall is present and at which all treatment has been completed.
E-001-D	At any point in the disinfection facilities for Waste 001 at which point adequate contact with the disinfectant is assured. (May be coincident with E-001)
E-001-S	At any point in the treatment and disposal facilities following dechlorination.

C. RECEIVING WATERS

Station	Description
C-1	At a point in Petaluma River directly above the center of the diffuser.
C-2-A C-2-B	At points in Petaluma River located 500 feet upstream and downstream, respectively of the center of the diffuser.
C-R	At a point in Petaluma River located 2000 feet downstream from the diffuser.

D. LAND OBSERVATIONS

Station	Description
P-1 thru P-'n'	Located at the corners and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the locations of these stations will accompany each report).

E. OVERFLOWS AND BYPASSES

Station	Description
O-1 thru O-'n'	Bypass or overflows from manholes, pump stations or collection system. Note: Bypass shall be reported to this Regional Board by telephone immediately after occurrence. A written report shall be filed with the Board within 5 working days which shall contain information such as quantity involved, location, course of bypass, nature of affects, and corrective measures taken.

II. SCHEDULE OF SAMPLING MEASUREMENTS AND ANALYSIS

The schedule of sampling, measurements and analysis shall be that given in Table I.

III. MODIFICATIONS TO "PART A"

A. This monitoring program does not include the following sections of Part A, dated January 1978: C.3., C.4.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 85-14.

2. Is effective on the date indicated below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordereed by the Executive Officer.

ROGER B. JAMES
Executive Officer

Effective Date February 27, 1985

Attachments: Table I
Form A

Month _____

Year _____

FORM A

CHLORINE RESIDUAL

	Grab Sample mg/l AM	Grab Sample mg/l PM	Corresponding Analyzer Reading mg/l AM	Corresponding Analyzer Reading mg/l PM	Number of Analyzer Readings	Number of Non-zero Readings mg/l	Maximum Analyzer Reading mg/l	Average Value of Non-zero mg/l
1								
2								
3								
4								
5								
6								
7								
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10								
11								
12								
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TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-001	E-001		E-001-D		E-001-S		P	O	L	(4) C			
TYPE OF SAMPLE	C-24	G	C-24	G	Cont	Cont	C-24				G			
Flow Rate (mgd)	D				D									
BOD, 5-day, 20°C or COD (mg/l & kg/day)	3/W		3/W											
(3) Chlorine Residual & Dosage (mg/l & kg/day)						Cont or 2H								
Settleable Matter (ml/l-hr. & cu. ft./day)		D												
Total Suspended Matter (mg/l & kg/day)	3/W		3/W											
Oil and Grease (2) (mg/l & kg/day)	(2) M		(2) M											
Coliform (Total) (MPN/100 ml) per req't				5/W										
Fish Tox'y 96-hr. TL % Surv'l in undiluted waste							M							
Ammonia Nitrogen (mg/l & kg/day)							M							
Nitrate Nitrogen (mg/l & kg/day)			2/y											
Nitrite Nitrogen (mg/l & kg/day)														
Total Organic Nitrogen (mg/l & kg/day)														
Total Phosphate (mg/l & kg/day)			2/y											
Turbidity (Jackson Turbidity Units)											M			
pH (units)		D									M			
Dissolved Oxygen (mg/l and % Saturation)		D												
Temperature (°C)											M			
Apparent Color (color units)														
Secchi Disc (inches)											M			
Sulfides (if DO<2.0 mg/l) Total & Dissolved (mg/l)		D									M			
Arsenic (mg/l & kg/day)			2/y											
Cadmium (mg/l & kg/day)			2/y											
Chromium, Total (mg/l & kg/day)			2/y											
Copper (mg/l & kg/day)			2/y											
Cyanide (mg/l & kg/day)			2/y											
Silver (mg/l & kg/day)			2/y											
Lead (mg/l & kg/day)			2/y											

TABLE 1(continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-001	E-001		E-001-D		E-001-S		P	O	L	(4) C			
TYPE OF SAMPLE	C-24	G	C-24	G	Cont	Cont	C-24	O	O	O	G			
Mercury (mg/l & kg/day)			2/y											
Nickel (mg/l & kg/day)			2/y											
Zinc (mg/l & kg/day)			2/y											
Phenolic Compounds (mg/l & kg/day)			2/y											
All Applicable Standard Observations								W	(1) E					
Bottom Sediment Analyses and Observations														
Total Ident. Chlor. Hydrocarbons (mg/l & kg/day)			2/y											
Unionized Ammonia (mg/l)											M			
Chlorophyll "a" (mg/l)											M			

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
G = groundwaters stations
I = intake and/or water supply stations

FREQUENCY OF SAMPLING

E = each occurrence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

FOOTNOTES FOR TABLE I

(1) During any day when bypassing occurs from any treatment unit(s) in the plant, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurement and analyses:

1. Composite sample for BOD, total suspended solids, oil and grease.

2. Grab sample for Coliform (Total and Fecal), Settleable matter.

(2) Oil and grease sampling shall consist of 3 grab samples taken at equal intervals during the sampling day, with each grab being collected in a glass container. A composite shall be made using equal volumes of each grab. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.

(3) Chlorine residual following dechlorination shall be reported using the attached form A or equivalent.

(4) Receiving water sampling shall be performed during high slack tide.